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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHEN, CHONGSHAN	

ART UNIT	PAPER NUMBER
2162	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/785,573	CREETH, RICHARD F.	
	Examiner	Art Unit	
	Chongshan Chen	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to Amendment filed on 28 June 2004. Claims 1-43 are pending in this Office Action.

Response to Arguments

2. As per applicant's arguments regarding Arning does not disclose that either of database 134, 136 employs the novel object model of the present invention (i.e., where at least one of the database has stored thereon both at least one cube object comprising at least one saved view of data and at least one dimension object comprising at least one saved subset of elements) have been considered but are not persuasive. Applicant should note that the rejected claims recite the cube object and the dimension object are stored on dataserver, not database. Arning teaches a dataserver (Arning, Fig. 1, server 120) includes multi-dimensional databases 134, 136, at least one cube object (Arning, Fig. 3, page 4, [0058]-[0063], Logical Structure of Multi-dimensional Database, "Generally, the multi-dimensional database is arranged as a multi-dimensional array ... a three-dimensional array can be visualized as a cube with each dimension forming an edge") stored on each of at least one dataserver (Arning, Fig. 1, server 120), and at least one dimension object defining relationships between data in the at least one cube object (Arning, page 4, [0061], "cubes generally have hierarchies or formula-based relationships of data within each dimension ...") stored on each of said at least one dataserver (Arning, Fig. 1, server 120). Hence, the dataserver 120 of Arning has stored thereon both cube object and dimension object. Therefore, the arguments are not persuasive.

3. As per applicant's arguments regarding Arning is concerned with solving a completely different problem than is the object model aspect of the present invention ... Claims 1 and 10 are directed to novel object model, the purpose and benefit of which is to provide a much more intuitive technique from a programming perspective as compared to employing low-level API function calls have been considered but are not persuasive. Arning and the claimed invention both relate to multi-dimensional databases. Both multi-dimensional databases have the same structure, they are used to store cube/dimension object. Although the goals of Arning and the claimed invention are different, it is noted that the goal is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. Applicant's arguments, see page 18 paragraph, filed on 28 June 2004, with respect to the rejection(s)of claim(s) 11, 24 and 27 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Blackman et al. (US 6,360,229 B2). Blackman teaches a two stage adaptive instantiating and inflating technique. In the first stage, instantiating a predefined group of specified objects up-front a first time said database is accessed (Blackman, col. 6, lines 34-50, "the application program 106 dynamically loads previously-defined objects into the objects framework 108 to access the database 112 during execution time ... the application program 106 first loads the objects framework 108 class library by instantiating the DL/IT™ object ..."). In the second stage, Blackman uses on-demand instantiation and inflation technique to instantiate and inflate nonspecified objects as each of nonspecified objects is

accessed (Blackman, col. 4, line 65 – col. 5, line 8, "the objects framework instantiates IMS™ data objects upon demand from application programs and manages those objects from creation to deletion"). By use the instantiation and inflation technique of Blackman, the database access system does not need to instantiate all the objects up front the first time the database is access. It only needs to instantiate the predefined objects, and instantiate other objects upon demand at a later time. This instantiation technique saves memory space and improves process speed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Arning et al. ("Arning", Pub. No.: US 2001/0054034).

As per claim 1, Arning discloses an object model for manipulating multidimensional data (Arning, page 1, [0014], "Multi-dimensional databases provides a means for business analysts to easily view summary data and other derived data in a multi-dimensional model of a business") comprising:

a dataspace comprising at least one dataserver (Arning, Fig. 1, server120);

at least one cube object stored on each of said at least one dataserver, each of said at least one cube object comprising at least one saved view of data (Arning, Fig. 2 & 3, page 4, [0058]-

[0059], "Fig. 3 is a diagram that illustrates a logical structure of a multi-dimensional database 300. Generally, the multi-dimensional database 300 is arranged as a multi-dimensional array ... a three-dimensional array can be visualized as a cube with each dimension forming as edge ..."); and

at least one dimension object defining relationships between data in the at least one cube object stored on each of said at least one dataserver, each of said at least one dimension object comprising at least one saved subset of elements (Arning, Fig. 2 & 3, page 4, [0061], "cubes generally have hierarchies or formula-based relationships of data within each dimension...").

As per claim 2, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses a plurality of dataservers (Arning, Fig. 1, page 1, [0013]).

As per claim 3, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses at least one dataserver for a database having multidimensional financial data stored thereon (Arning, Fig. 1-6, page 1, [0014]).

As per claim 4, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses at least one dataserver comprises at least one dataserver for an OLAP database (Arning, Fig. 1, 138, OLAP database system).

As per claim 5, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses each of said at least one dimension object further comprises at least one saved element (Arning, Fig. 1-10).

As per claim 6, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses each of said at least one dimension object further comprises at least one saved hierarchy (Arning, Fig. 1-10).

As per claim 7, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses the at least one saved view of data comprises at least one saved value of data (Arning, Fig. 1-10).

As per claim 8, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses said dataspace comprises an entry point into said object model (Arning, Fig. 1-10).

As per claim 9, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses dataspace comprises an entry point into said object model (Arning, Fig. 1-10).

As per claim 10, Arning discloses an object model for manipulating multidimensional data (Arning, page 1, [0014], "Multi-dimensional databases provides a means for business analysts to easily view summary data and other derived data in a multi-dimensional model of a business") comprising:

a dataspace comprising a plurality of dataservers for OLAP databases, said dataspace comprising an entry point into said object model (Arning, Fig. 1, page 1, [0013]);

at least one cube object stored on each of said dataservers, each of said at least one cube object comprising at least one saved view of data, each of the at least one saved view of data comprising at least one saved value of data and at least one subset of data (Arning, Fig. 2 & 3, page 4, [0058]-[0059]); and

at least one dimension object stored on each of said dataservers, each of said at least one dimension object comprising at least one saved subset of elements, at least one element and at least one hierarchy (Arning, Fig. 2 & 3, page 4, [0061]).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 11-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arning et al. ("Arning", Pub. No.: US 2001/0054034) in view of Blackman et al. ("Blackman", US 6,360,229 B2).

As per claim 11, Arning discloses a system for displaying data from a multidimensional database to a user, said system comprising:

a system computer (Arning, Fig. 1);

a multidimensional database accessible by said computer, said multidimensional database having objects stored thereon (Arning, Fig. 1, multi-dimensional database 134, 136).

Arning does not explicitly disclose object model software executing on said system computer for instantiating and inflating a predefined group of specified objects up-front a first time said database is accessed, and for instantiating and inflating nonspecified objects which are not included in the predefined group of specified objects on demand as each of the nonspecified objects is accessed.

Blackman teaches instantiating and inflating a predefined group of specified objects up-front a first time said database is accessed (Blackman, col. 6, lines 34-50, "the application program 106 dynamically loads previously-defined objects into the objects framework 108 to

access the database 112 during execution time ... the application program 106 first loads the objects framework 108 class library by instantiating the DL/IT™ object ..."), and instantiating and inflating nonspecified objects on demand as each of the nonspecified objects is accessed (Blackman, col. 4, line 65 – col. 5, line 8, "the objects framework instantiates IMS™ data objects upon demand from application programs and manages those objects from creation to deletion"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the instantiation and inflation technique of Blackman in the database access system of Arning. By use the instantiation and inflation technique of Blackman, the database access system does not need to instantiate all the objects up front the first time the database is access. It only needs to instantiate the predefined objects, and instantiate other objects upon demand at a later time. This instantiation technique saves memory space and improves process speed.

As per claim 12, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose software executing on said computer for receiving from the user an indication of specified objects (Blackman, col. 6, lines 35-50).

As per claim 13, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose software executing on said computer for receiving from the user state information (Blackman, col. 7, lines 40-46).

As per claim 14, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose the specified objects comprise collections of objects (Blackman, col. 6, lines 35-50).

As per claim 15, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose the specified objects comprise specific properties of objects (Blackman, col. 6, lines 35-50).

As per claim 16, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose multi-dimensional database comprises a database having multidimensional financial data stored thereon (Arning, Fig. 1-3, page 1, [0013]-[0014]).

As per claim 17, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose multidimensional database comprises an OLAP database (Arning, Fig. 1).

As per claim 18, Arning and Blackman teach all the claimed subject matters as discussed in claim 11, and further disclose a dataspace comprising at least one dataserver; at least one cube object stored on each of said at least one dataserver, each of said at least one cube object comprising at least one saved view of data; and at least one dimension object stored on each of said at least one dataserver, each of said at least one dimension object comprising at least one saved subset of elements (Arning, Fig. 1-4, page 4, [0058]-[0061]).

As per claim 19, Arning and Blackman teach all the claimed subject matters as discussed in claim 18, and further disclose the specified objects are identified via said dataspace (Blackman, col. 6, lines 35-63).

As per claim 20, Arning and Blackman teach all the claimed subject matters as discussed in claim 19, and further disclose software executing on said computer for receiving from the user an indication of specified objects (Blackman, col. 6, lines 35-63).

As per claim 21, Arning and Blackman teach all the claimed subject matters as discussed in claim 20, and further disclose the indication of specified objects comprises a structured string variable (Blackman, col. 8, line 50-67).

As per claim 22 and 23, Arning and Blackman teach all the claimed subject matters as discussed in claim 21, except for explicitly disclosing the structured string variable comprises raw text separated by delimiters or the string is in an extensible markup language (XML) format. However, Blackman teaches using object-oriented application program to access the database and instantiate objects (Blackman, col. 5, lines 1-2, col. 8. lines 50-67). Furthermore, applicant's drawing (Fig. 4A, which labels as prior art) shows an object-oriented program, which identifies and instantiates objects using structured string variables. This string variables contain raw text of various objects separated by a delimiter (","), and use strings in an extensible markup language (XML) format. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify objects using structured string variables in the database access system of Blackman in order to identify and instantiate objects.

Claims 24-26 are rejected on grounds corresponding to the reasons given above for claims 11-15.

Claim 27 is rejected on grounds corresponding to the reasons given above for claims 1 and 11.

Claims 28-43 is rejected on grounds corresponding to the reasons given above for claims 2-9 and 12-23.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Petculescu et al. (US 6,473,764 B1) teach a method, apparatus, and software are disclosed for analyzing the data in an OLAP database.

Bowman-Amuah (US 6,636,242 B2) teaches a method for instantiate objects.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is (571)272-4031. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (571)272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CC
October 28, 2004

JEAN M. CORRIELUS
PRIMARY EXAMINER